
ADDENDUM

***FY 1995 - FY 1998
DEPLOYMENT FACT SHEETS
PREPARED IN FY 1999***

EM DOCUMENTS MORE PAST DEPLOYMENTS

The 1999 Deployment Fact Sheet Book reflects the deployment information from TMS as of February 10, 2000. The deployment information changed from what was published in the first Deployment Fact Sheet Book because additional information about FY 1991 - FY 1998 deployments was identified and documented.

As additional deployments are documented and verified, they are added to the total number of OST deployments. For the most updated information, refer to the Technology Management System (TMS) at <http://ost.em.doe.gov/tms>.

The figures to the right summarize the changes from the first Deployment Fact Sheet Book to the 1999 Deployment Fact Sheet Book. Figure A-1 shows the deployments reported in the first Deployment Fact Sheet Book. Figure A-2 shows the changes to deployment information identified during FY 1999. Figure A-3 shows the deployments as of February 10, 2000, which is the sum of values shown in Figure A-1 and Figure A-2. The values in Figure A-3 are used in Section 1 of this report.

A summary of the changes and the FY 1995 - FY 1998 Deployment Fact Sheets that were not included in the first Deployment Fact Sheet Book are provided in the next pages.

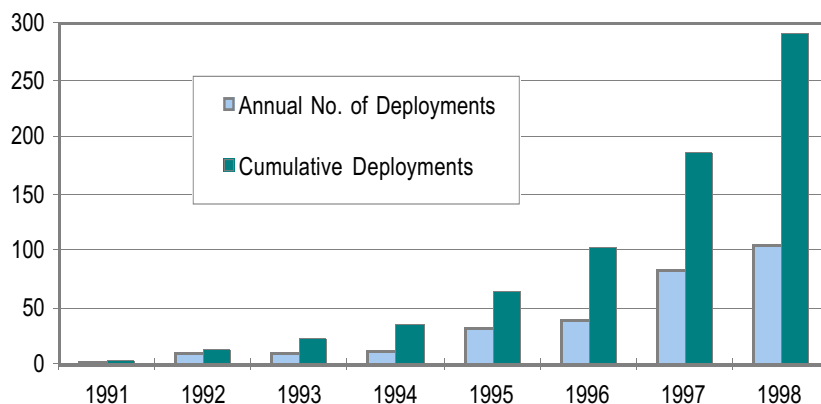


Figure A-1 - FY 1991 - FY 1998 Deployments as of February 1999

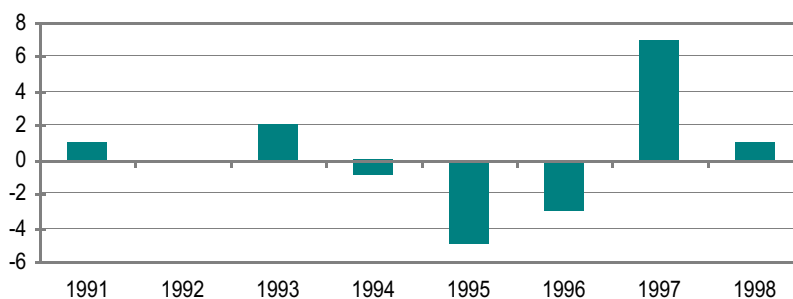


Figure A-2 - Changes to FY 1991 - FY 1998 Deployment Information

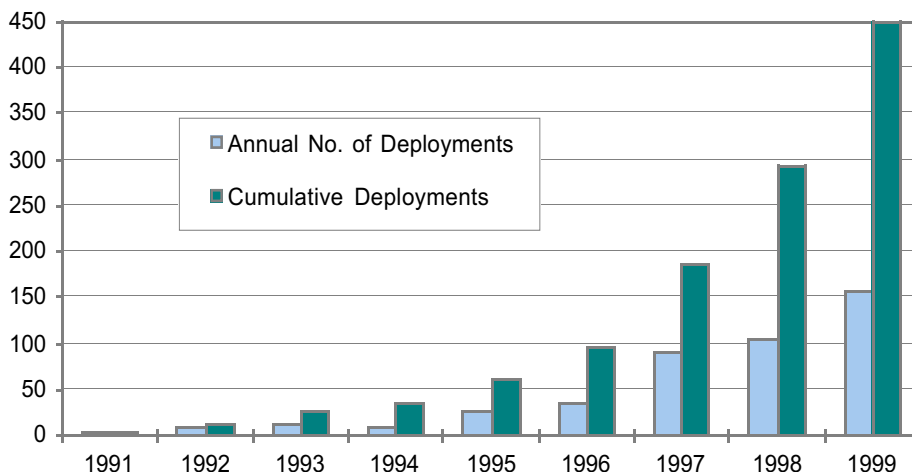


Figure A-3 - Total FY 1991 - FY 1999 Deployments as of February 2000

Changes to Information for FY 1991 to FY 1998 Deployments

As OST continues to improve the quality of deployment data and verify the accuracy and completeness of current and past deployment information, existing deployment information is updated. During FY 1999, with the help of the Technology Achievement Study, OST added deployments, reclassified deployments from one fiscal year to another, reclassified deployments as demonstrations, and removed deployments.

Of the deployments that were added for FY 1991 to FY 1998, six deployments were included in last year's book, but have been reclassified from an earlier or later fiscal year. OST documented sixteen additional DOE site deployments and four additional non-DOE site deployments. The additional FY 1995 to FY 1998 Deployment Fact Sheets are provided in the following pages.

Deployment FY	DOE Site Deployments		Net Change
	Added in FY 1999	Removed in FY 1999	
FY 1991 - FY 1994	4	2	2
FY 1995	0	5	(5)
FY 1996	2	5	(3)
FY 1997	10	3	7
FY 1998	6	5	1

FY 1991 to FY 1998 DOE Site Deployments Identified in FY 1999

- In Well Vapor Stripping (OST/TMS ID 6 - Application Record ID: 1303) deployed in FY 1998 at Brookhaven National Lab
- Electrical Resistance Tomography for Subsurface Imaging (OST/TMS ID 17 - Application Record ID: 1338) deployed in FY 1998 at INEEL
- SEAMIST (OST/TMS ID 53 - Application Record ID: 1654) deployed in FY 1997 at Lawrence Livermore National Laboratory - Main Site
- SEAMIST (OST/TMS ID 53 - Application Record ID: 1892) deployed in FY 1993 at Savannah River Site
- Direct Sampling Ion Trap Mass Spectrometry (DSITMS) (OST/TMS ID 69 - Application Record ID: 1359) deployed in FY 1993 at ORNL
- Direct Sampling Ion Trap Mass Spectrometry (DSITMS) (OST/TMS ID 69 - Application Record ID: 1360) deployed in FY 1994 at SRS
- Laser Ablation/Mass Spectroscopy (LA/MS) (OST/TMS ID 127 - Application Record ID: 1346) deployed in FY 1998 at Hanford
- Innovative DNAPL Characterization Toolbox (OST/TMS ID 237 - Application Record ID: 1812) deployed in FY 1998 at Savannah River Site
- Structured Light (OST/TMS ID 367 - Application Record ID: 1749) deployed in FY 1991 at Fernald
- Corrosion Probe (OST/TMS ID 1985 - Application ID: 1015) deployed in FY 1996 at Hanford
- Remote Viewing System (OST/TMS ID 1988 - Application Record ID: 1669) deployed in FY 1997 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL)
- Expedited Reclamation Demo Using Cotter Concentrate (OST/TMS ID 2038 - Application Record ID: 1430) deployed in FY 1997 at Nevada Test Site
- Wireless Remote Radiation Monitoring System (OST/TMS ID 2104 - Application Record ID: 1138) deployed in FY 1998 at Hanford
- Iron Treatment Wall (OST/TMS ID 2156 - Application Record ID: 1168) deployed in FY 1998 at Kansas City Plant
- Flygt Mixer (OST/TMS ID 2232 - Application Record ID: 1345) deployed in FY 1997 at Savannah River Site
- PHOSter (OST/TMS ID 2971 - Application Record ID: 1897) deployed in FY 1997 at Savannah River Site

DOE Site Deployments Reclassified to a Different Fiscal Year

- SEAMIST (OST/TMS ID 53 - Application Record ID: 121) FY 1996 deployment at Savannah River Site was reclassified to FY 1997 deployment
- Expedited Site Characterization (OST/TMS ID 77 - Application Record ID: 339) FY 1997 deployment at Central Nevada Test Site was reclassified to FY 1996 deployment
- Air Quality Monitoring for Alpha Contamination (OST/TMS ID 681 - Application Record ID: 342) FY 1995 deployment at Nevada Test Site was reclassified to FY 1997 deployment
- Confined Sluicing End Effector (OST/TMS ID 812 - Application Record ID: 203) FY 1998 deployment at Oak Ridge was reclassified to FY 1997 deployment
- Stereo Viewing System (OST/TMS ID 890 - Application Record ID: 557) FY 1996 deployment at Hanford was reclassified to FY 1997 deployment
- Gamma Cam (TM) Radiation Imaging System (OST/TMS ID 1840 - Application Record ID: 536) FY 1996 deployment at LANL was reclassified to FY 1997 deployment

DOE Site Deployments Reclassified to a Demonstration

- Passive Soil Vapor Extraction (OST/TMS ID 56 - Application Record ID: 132) FY 1996 deployment at INEEL WAG 7 - Pit 2 at SDA was reclassified to lab-scale demonstration
- Vitrification of Ion Exchange Materials (OST/TMS ID 81 - Application Record ID: 510) FY 1997 deployment at Savannah River Site was reclassified to a demonstration
- Zero Tension Lysimeters (OST/TMS ID 715 - Application ID 506) FY 1994 deployment at Rocky Flats was reclassified to a full-scale demonstration

DOE Site Deployments Deleted

- Remotely Piloted Vehicles (RPVs) and Miniaturized Sensors (OST/TMS ID 76 - Application Record ID: 254) FY 1996 deployment at Portsmouth was deleted on 5/28/99
- Expedited Site Characterization (OST/TMS ID 77 - Application ID 340) FY 1995 deployment at FUSRAP Saint Louis Airport Site was deleted on 5/28/99
- Acoustic Characterization of Wastes in Double-Shelled Underground Storage Tanks (OST/TMS ID 175 - Application ID 341) FY 1995 deployment at Hanford SY-101 was deleted on 5/28/99
- In Situ Measurement of Volatile and Semi-Volatile Organic Compounds in the Subsurface (OST/TMS ID 219 - Application ID 637) FY 1995 deployment at Savannah River Site was deleted on 5/28/99
- Stereo Viewing System (OST/TMS ID 890 - Application Record ID: 233) FY 1997 deployment at Oak Ridge GAAT Tanks was deleted on 11/3/99
- Raman Probe (OST/TMS ID 1544- Application Record ID: 1255) FY 1998 deployment at Savannah River Site, Tank 43 was deleted on 5/11/99
- DNAPL Bioremediation - RTDF (OST/TMS ID 1737- Application Record ID: 1198) FY 1998 deployment at INEEL was deleted on 12/13/99
- Segmented Gate System (OST/TMS ID 2158- Application Record ID: 883) FY 1998 deployment at Sandia National Laboratories, Site 16 was deleted on 12/10/99
- OSS Salt Sampler (OST/TMS ID 2308) FY 1998 deployment at the Savannah River Site was deleted when this technology was deleted on 9/2/99

FY 1991 to FY 1998 Non-DOE Site Deployments Identified in FY 1999

- Electrical Resistance Tomography for Subsurface Imaging (OST/TMS ID 17 - Application Record ID: 1339) deployed in FY 1997 at Florence Site
- Remote Sensing Systems Development and Applications (OST/TMS ID 208 - Application Record ID: 1361) deployed in FY 1993 at Nellis Air Force Base
- Transfer of CC&AT Technology (OST/TMS ID 231 - Application Record ID: 1342) deployed in FY 1996 at Schilling Development
- Hydrous Pyrolysis/Oxidation (OST/TMS ID 1519 - Application Record ID: 586) deployed in FY 1997 at Visalia Commercial Creosote Site

Non-DOE Site Deployments Reclassified to a Demonstration

- In Situ Permeable Flow Sensor (OST/TMS ID 99 - Application ID 136) FY 1995 deployment at Edwards Air Force Base was reclassified to a bench-scale demonstration
- Zero Tension Lysimeters (OST/TMS ID 715 - Application ID 376) FY 1994 deployment at Ames City (non-DOE) was reclassified to a small-scale demonstration
- DNAPL Bioremediation - RTDF (OST/TMS ID 1737 - Application Record ID: 699) FY 1998 deployment at Dover AFB National Environmental Technology Test Site was reclassified to a small-scale demonstration

Non-DOE Site Deployments Deleted

- In Well Vapor Stripping (OST/TMS ID 6 - Application Record ID: 772) FY 1997 deployment at Massachusetts Military Reservation was deleted on 9/28/99

In Well Vapor Stripping

(OST/TMS ID: 6/ TMS Application ID: 1303)

The objective of this project is to demonstrate the In-Well Vapor Stripping system at Edwards Air Force Base (AFB), California, and evaluate: 1) the system's effectiveness at removing VOC contamination, 2) its ability to reach concentrations at or below regulatory limits, and 3) the size of its zone of influence as determined through field results and computer simulations.

The In-Well Vapor Stripping method extracts VOCs dissolved in groundwater by aerating the water column in a well. VOCs enter the gas phase and are pulled to the surface for treatment. Aeration also lifts the water within the well. Clean water exits the well above the water table where it is then allowed to infiltrate through the ground. By simultaneously extracting groundwater and re-introducing this water above the water table, a circulation cell is created in the subsurface that systematically removes VOCs.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Brookhaven National Lab, Off-site location (Upton, NY, United States)
PBS Name:	Not Specified
Date of Deployment:	December 1997
Technology User:	DOE-CH
Deployment Value/Impact: Although located in an industrial part, the offsite location is proximate to residential areas. The alternative to treatment of the groundwater was to have been the costly method of pumping and treating from the Long Island Expressway to the laboratory property. In addition to the inconvenient remedial method of pumping and treating to local residents, energy requirements would also have been greater.	
Vendor Name for this Technology:	Same as primary Technology Title
Point of Contact:	
User Program POC(s): Yvette Collazo (DOE-CH) - Argonne, IL. Tel. 630-252-2102	OST Program POC(s): Elizabeth Phillips (DOE-OR) - Oak Ridge, TN. Tel. 423-241-6172
Technology User POC(s): Gail Penny (DOE Brookhaven Group) - Brookhaven, IL. Tel. (516) 344-3429	Vendor Company POC(s): Eric Kringle (IEG Technologies) - Morresville, NC. Tel. 704.660.1673

Major Developers:

- EG&G
- NoVOCs, Inc.
- Pacific Northwest National Laboratory
- Stanford University

Vendor Company:

IEG Technologies

Other Deployments:

- Deployed (type: DOE) in FY 1998 at Mound in Miamisburg, OH
- Deployed (type: DOE) in FY 1997 at Savannah River Site (South A&M Area Ground Water Plume) in Aiken, SC
- Deployed (type: Non-DOE) in FY 1996 at Edwards Air Force Base in Rosamond, CA

Electrical Resistance Tomography for Subsurface Imaging

(OST/TMS ID: 17/ TMS Application ID: 1338)

Electrical Resistance Tomography (ERT) has been developed by LLNL through funding by DOE OST. The technology provides 3-D imaging of the subsurface for geological features as well as changes due to remediation operations. ERT has not only been demonstrated for many types of remediation operations (soil heating, electrokinetics, pump and treat, Dynamic Stripping, Hydrous Pyrolysis, and more)but it has been engineered to be deployed by a cone penetrometer and has been commercialized. In addition, ERT has been deployed in characterizing Yucca Mountain, cleaning LLNL main site, cleaning up a commercial site with hundreds of thousands of gallons of DNAPLs in the subsurface. Other technologies based upon ERT have been demonstrated and await deployment by industry at DOE sites.

DESCRIPTION OF THE DEPLOYMENT	
Location:	INEEL, Box Canyon (Idaho Falls, ID, United States)
PBS Name:	Not Specified
Date of Deployment:	October 1997
Technology User:	
Deployment Value/Impact:	No Value/Impact Statement has been defined
Vendor Name for this Technology:	Same as primary Technology Title
<u>Point of Contact:</u>	
User Program POC(s): No Points of Contact are listed.	OST Program POC(s): John B. Jones (DOE-NV) - Las Vegas, NV. Tel. 702-295-0532
Technology User POC(s): No Points of Contact are listed.	Vendor Company POC(s): No Points of Contact are listed.

Major Developers:

Applied Research Associates, Inc.

Vendor Company:

SteamTech Environmental Services, Inc.(www.steamtech.com)

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Portsmouth Gaseous Diffusion Plant (X-701B Plume Site) in Portsmouth, OH
- Deployed (type: DOE) in FY 1997 at Yucca Mountain Nevada Test Site (Site Characterization Project.) in Mercury, NV
- Deployed (type: DOE) in FY 1997 at Lawrence Livermore National Laboratory (Site 300) in Livermore, CA
- Deployed (type: Non-DOE) in FY 1997 at Southern California Edison Pole Treatment Yard in Visalia, CA
- Deployed (type: Non-DOE) in FY 1997 at Florence Site in Florence, AZ
- Deployed (type: DOE) in FY 1991 at Lawrence Livermore National Laboratory (Main Site) in Livermore, CA

Electrical Resistance Tomography for Subsurface Imaging

(OST/TMS ID: 17/ TMS Application ID: 1339)

Electrical Resistance Tomography (ERT) has been developed by LLNL through funding by DOE OST. The technology provides 3-D imaging of the subsurface for geological features as well as changes due to remediation operations. ERT has not only been demonstrated for many types of remediation operations (soil heating, electrokinetics, pump and treat, Dynamic Stripping, Hydrous Pyrolysis, and more) but it has been engineered to be deployed by a cone penetrometer and has been commercialized. In addition, ERT has been deployed in characterizing Yucca Mountain, cleaning LLNL main site, cleaning up a commercial site with hundreds of thousands of gallons of DNAPLs in the subsurface. Other technologies based upon ERT have been demonstrated and await deployment by industry at DOE sites.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Florence Site (Florence, AZ, United States)
PBS Name:	Not Applicable (Non-DOE Site)
Date of Deployment:	FY 1997
Technology User:	No Technology User has been defined
Deployment Value/Impact: No Value/Impact Statement has been defined	
Vendor Name for this Technology:	Same as primary Technology Title
Point of Contact:	
User Program POC(s): No Points of Contact are listed.	OST Program POC(s): John B. Jones (DOE-NV) - Las Vegas, NV. Tel. 702-295-0532
Technology User POC(s): No Points of Contact are listed.	Vendor Company POC(s): No Points of Contact are listed.

Major Developers:

Applied Research Associates, Inc.

Vendor Company:

No Vendor information has been defined

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Portsmouth Gaseous Diffusion Plant (X-701B Plume Site) in Portsmouth, OH
- Deployed (type: DOE) in FY 1998 at INEEL (Box Canyon) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1997 at Yucca Mountain Nevada Test Site (Site Characterization Project.) in Mercury, NV
- Deployed (type: DOE) in FY 1997 at Lawrence Livermore National Laboratory (Site 300) in Livermore, CA
- Deployed (type: Non-DOE) in FY 1997 at Southern California Edison Pole Treatment Yard in Visalia, CA
- Deployed (type: DOE) in FY 1991 at Lawrence Livermore National Laboratory (Main Site) in Livermore, CA

SEAMIST

(OST/TMS ID: 53/ TMS Application ID: 1654)

SEAMIST has been demonstrated and deployed as an innovative tool to better access the subsurface for characterization and monitoring of contaminants in both vertical and horizontal boreholes, both above and below the water table. SEAMIST consists of an airtight membrane liner pneumatically and/or hydraulically emplaced inside a borehole, simultaneously maintaining the integrity of the borehole and permitting collection of contaminant samples from the subsurface at discrete depth intervals. Instrumentation can be used in horizontal, vertical, enlarged, constricted, and curved holes.

DESCRIPTION OF THE DEPLOYMENT

Location: Lawrence Livermore National Laboratory - Main Site, Tritiated Water Plume Tracking (Livermore, CA, United States)

PBS Name: LLNL Main Site Remediation [OK-001, 0200]

Date of Deployment: April 1997

Technology User: LLNL

Deployment Value/Impact: SEAMIST provided rapid accessibility to subsurface instrumentation for service, maintenance or adjustment. This was particularly important for an experimental facility where there is a need to try different instrument configurations.

Vendor Name for this Technology: Same as primary Technology Title

Point of Contact:

User Program POC(s):

Mr. Kim V. Abbott (DOE-Oakland) - Oakland, CA.
Tel. 510-637-1501

Technology User POC(s):

Charles Carrigan (LLNL) - Livermore, CA. Tel. 925-422-3941

OST Program POC(s):

Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596

Vendor Company POC(s):

Carl Keller (FLUTe, Ltd.) - Sante Fe, NM. Tel. (505) 455-1300

Major Developers:

Eastman Cherrington Environmental Corp.

Vendor Company:

FLUTe, Ltd.(www.flut.com)

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (OU 1148) in Los Alamos, NM
- Deployed (type: DOE) in FY 1997 at Savannah River Site (A/M Area) in Aiken, SC
- Deployed (type: DOE) in FY 1993 at Savannah River Site (Integrated Demo Site) in Aiken, SC
- Deployed (type: DOE) in FY 1992 at Lawrence Livermore National Laboratory (Tritiated water plume tracking) in Livermore, CA

Laser Ablation/Mass Spectroscopy (LA/MS)

(OST/TMS ID: 127/ TMS Application ID: 1346)

The laser ablation/mass spectrometer system is a chemical analysis method that can determine the amount of most elemental/isotopic constituents in tank waste samples with no sample preparation. This technology has the potential to provide rapid analytical results while lowering production times and worker exposure

DESCRIPTION OF THE DEPLOYMENT	
Location:	Hanford Site, Tank 241-AX-104 (Richland, WA, United States)
Project Name:	Hanford Tank 241-AX-104
Date of Deployment:	January 1998
Technology User:	Lockheed Martin Hanford Corporation
Deployment Value/Impact: The baseline approach to verify that samples have been adequately homogenized relies on operator judgement. Visually inspecting the blended material while it is still in the hot cell does provide useful information on whether sample blending is adequate, but the method is subjective and judgement will vary between operators. Subtle distinctions such as sample inhomogeneity can be easily missed. Analyzing replicate split samples would confirm that the samples are representative, but this additional analysis is costly and can cause delays if new samples need to be drawn and blended. LA/MS provides a fast method to validate whether or not the split samples are representative of the primary sample, especially if the primary sample is a composite sludge or a solid mixture.	
Vendor Name for this Technology:	Same as primary Technology Title
Point of Contact:	
User Program POC(s): Jon Peschong, DOE-RL, (509) 376-9372	OST Program POC(s): Ted Pietrok, DOE-RL, (509) 372-4546

Major Developers:

- Pacific Northwest National Laboratory
- Newpport Corporation
- Gibson Medical Electronics
- nuLogic, Inc.
- New England Affiliated Technologies
- Molelectron Detector, Inc.
- Continuum Electro-Optics, Inc.
- VG Elemental

Vendor Company:

No Vendor information has been defined

Other Deployments:

- Deployed (type: DOE) in FY 1996 at Hanford (222-S Laboratory Hot Cell) in Richland, WA

Transfer of CC&AT Technology

(OST/TMS ID: 231/ TMS Application ID: 1342)

This program area supports transfer of selected CC&AT developed technologies into the commercial market place so that they are readily available to site remediators. Current emphasis is placed on establishing commercial availability of some GISC-Kit software at Deneb Robotics and a whole arm protection system at Merritt Systems, Inc. Additionally, a cooperative research agreement was executed with Schilling Robotics for commercialization of an RSI controller for the Titan and other hydraulic manipulators.. The CC&AT program element develops widely applicable robotic technologies that will provide faster, safer, and cheaper remediation of waste sites than comparable approaches employing human entry into hazardous environments or manually controlled remote devices.

DESCRIPTION OF THE DEPLOYMENT

Location: Schilling Development, Inc., Commercial Manufacturer (CA, United States)

PBS Name: Not Applicable (Non-DOE Site)

Date of Deployment: July 1996

Technology User: Commercial Vendor who supplies to DOE users.

Deployment Value/Impact: No Value/Impact Statement has been defined

Vendor Name for this Technology: Same as primary Technology Title

Point of Contact:

User Program POC(s):

Pam Saxman (DOE-AL) - Albuquerque, NM. Tel. 505-845-6101

OST Program POC(s):

- Mr. John DeGregory (DOE) - Germantown, MD. Tel. (301) 903-7949
- Kenny Osborne (DOE-ID) - Idaho Falls, ID. Tel. (208) 526-0805
- Dr. Linton W. Yarbrough (Department of Energy, Albuquerque) - Albuquerque, NM. Tel. 505-845-6569

Technology User POC(s):

Dr. Kwan S. Kwok (Sandia National Laboratories) - Albuquerque, NM. Tel. 505-845-7170

Vendor Company POC(s):

No Points of Contact are listed.

Major Developers:

No Major Developers are listed.

Vendor Company:

No Vendor information has been defined

Other Deployments:

This is the first deployment of this technology.

Innovative DNAPL Characterization Toolbox

(OST/TMS ID: 237/ TMS Application ID: 1812)

This 'toolbox' is representative of the innovative and cooperative effort of the Subsurface Contaminants Focus Area (SCFA) and Crosscut Program(s) to provide a Step Change Solution to clean-up problems across the DOE complex, collaborating also with other federal agencies and industry.

To successfully remediate a site contaminated by DNAPLs, it is important that the slowly-dissolving, non-aqueous phase source be found and removed. The Cone Penetrometer (CPT) is a direct push or drilling technology which reaches the target depth, enabling the deployment of a characterization technology which then delineates the contaminant. Simultaneous implementation of two or more technologies at a site accelerates cleanup schedules/milestones over that of the baseline technology.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Savannah River Site, 321-M Solvent Storage Tank (Aiken, SC, United States)
PBS Name:	M Area Deactivation Project [SR-FA15, 0512]
Date of Deployment:	March 1998
Technology User:	WSRC-SRTC
Deployment Value/Impact: The Ribbon NAPL Sampler was used to locate and identify DNAPL in the subsurface.	
Vendor Name for this Technology:	For specific technology information, see OST/TMS ID #2238
Point of Contact:	
User Program POC(s):	OST Program POC(s):
<ul style="list-style-type: none"> Bob Blundy (WSRC-ER) - Aiken, SC. Tel. 803-952-6788 Les Germany (DOE-SR) - Aiken, SC. Tel. (803) 725-8033 	<ul style="list-style-type: none"> John B. Jones (DOE-NV) - Las Vegas, NV. Tel. 702-295-0532 Elizabeth Phillips (DOE-OR) - Oak Ridge, TN. Tel. 423-241-6172 Sharon Robinson (DOE-SR) - Aiken, SC. Tel. 803-725-5793
Technology User POC(s):	Vendor Company POC(s):
Joe Rossabi (WSRC-SRTC) - Aiken, SC. Tel. (803) 557-7808	Carol A. Eddy-Dilek (Westinghouse Savannah River Company) - Aiken, SC. Tel. (513) 529-3218

Major Developers:
Dakota Technologies, Inc.

Vendor Company:
Westinghouse Savannah River Company

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone, A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Saturated Zone, A-014 Outfall) in Aiken, SC
- Deployed (type: Non-DOE) in FY 1999 at Jacksonville (Sages Dry Cleaner) in Jacksonville, FL
- Deployed (type: DOE) in FY 1999 at Savannah River Site (C-Area Burning Rubble Pit (Vadose Zone)) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone, A-014-Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone, A-014-Outfall (2)) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Paducah Gaseous Diffusion Plant in Paducah, KY
- Deployed (type: Non-DOE) in FY 1999 at NASA, Kennedy Space Center (Cape Canaveral Air Stn., Launch Complex 34) in Cape Canaveral, FL
- Deployed (type: DOE) in FY 1999 at Savannah River Site (321-M Area) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (R-Reactor Seepage Basins) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (M-Basin) in Aiken, SC

Hydrous Pyrolysis/Oxidation

(OST/TMS ID: 1519/ TMS Application ID: 586)

Chlorinated solvents are the most prevalent contaminants in the environments beneath DOE sites. Hydrous pyrolysis works on the principle that these chemicals readily oxidize to carbon dioxide and chlorine when heated to temperatures at the boiling point of water and in the presence of oxidants (oxygenated water or soil minerals). Steam and oxygen are injected, building a heated, oxygenated zone in the subsurface. When injection is halted, the steam condenses and contaminated ground water returns to the heated zone. There it mixes with the condensate and oxygen, which destroys most dissolved contaminants.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Visalia Commercial Creosote Site, Edison Power Pole Treatment Yard (Visalia, CA, United States)
PBS Name:	Not Applicable (Non-DOE Site)
Date of Deployment:	Fiscal Year 1997
Technology User:	Steam Tech Inc.
Deployment Value/Impact: The successful deployment at Visalia demonstrated that the combination of DUS/HPO can effectively remediate DNAPL source contamination. DUS mobilizes the contaminants so they can be brought to the surface for treatment and disposal, and HPO in situ destroys contaminant by oxidation. The combination of the two processes at Visalia has cleaned up the site at a rate up to 2000 times faster than pump and treat. The elevated temperatures resulting from these processes has also enhanced the rate of bioremediation.	
Vendor Name for this Technology:	Same as primary Technology Title
Point of Contact:	
User Program POC(s):	OST Program POC(s):
Mr. Kim Abbott (DOE-OAK) - Tel. 510-637-1501	Mr. James Wright (DOE-SR) - Tel. 803-725-5608

Major Developers:

- Integrated Water Technology Inc.
- Lawrence Livermore National Laboratory, Environmental Restoration Division
- SteamTech

Vendor Company:

No Vendor information has been defined

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Visalia (Power Pole Treatment Yard) in Visalia, CA

Corrosion Probe

(OST/TMS ID: 1985/ TMS Application ID: 1015)

The use of an electrochemical noise corrosion probe and corrosion inhibitor monitors in a high-level waste tanks will allow for real-time monitoring of corrosion processes and corrosion inhibitor effectiveness. The Hanford Site and the Savannah River Site jointly developed the current corrosion program.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Hanford Site, Tank 241-AZ-101 (Richland, WA, United States)
PBS Name:	Not Applicable
Date of Deployment:	August 1996
Technology User:	Lockheed Martin Hanford Corporation
Deployment Value/Impact: EM-30 installed a prototype corrosion probe in Hanford Tank 241-AZ-101 in August 1996. The probe uses a combination of commercially-available and site specific equipment. The probe is successfully operating and monitor corrosion rates as well as the onset of localized corrosion. The probe design is the basis of subsequent deployments.	
Vendor Name for this Technology:	Same as primary Technology Title
Point of Contact:	
User Program POC(s): Dr. Thomas R. Thomas (Lockheed Martin Idaho Technologies Company) - Idaho Falls, ID. Tel. (208) 526-3086	OST Program POC(s): Mr. Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. (509) 372-4546
Technology User POC(s): Mr. Jim O. Honeyman (CH2M Hill (CHG) Hanford Group, Inc.) - Richland, WA. Tel. (509) 376-7402	Vendor Company POC(s): No Points of Contact are listed.

Major Developers:

- Lockheed Martin
- Pacific Northwest National Laboratory, Energy Technology Division
- Savannah River Technology Center

Vendor Company:

Vendor Not Applicable

Other Deployments:

- Deployed (type: DOE) in FY 1998 at Hanford (Tank 241-AN-102) in Richland, WA
- Deployed (type: DOE) in FY 1997 at Hanford (Tank 241-AN-107) in Richland, WA

Remote Viewing System

(OST/TMS ID: 1988/ TMS Application ID: 1669)

The Remote Viewing System provides extensive observation capability inside underground storage tanks. Potential applications include observing Light Duty Utility Arm deployment operations inside waste tanks. An overview video camera is deployed through an auxiliary riser and provides global viewing in the tank.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), GAAT Tank W-3 (Oak Ridge, TN, United States)
PBS Name:	Not Specified
Date of Deployment:	July 1997
Technology User:	Lockheed Martin Energy Research under contract to M&I Bechtel Jacobs Company
Deployment Value/Impact: The Remote Viewing System provided observation ability inside GAAT tank W-3 at Oak Ridge. This application included observing Light Duty Utility Arm deployment operations. The Remote Viewing System was deployed through an auxiliary riser and provided global viewing in the tank.	
Vendor Name for this Technology:	Same as primary Technology Title
Point of Contact:	
User Program POC(s): Mrs. Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184	OST Program POC(s): Mr. Peter W. Gibbons (Numatec Hanford Company) - Richland, WA. Tel. (509) 372-4926
Technology User POC(s): Dr. Barry L. Burks (The Providence Group) - Knoxville, TN. Tel. 423-927-5519	Vendor Company POC(s): No Points of Contact are listed.

Major Developers:

No Major Developers are listed.

Vendor Company:

No Vendor information has been defined

Other Deployments:

- Deployed (type: DOE) in FY 1996 at Hanford (High Level Waste Tank A-101 Pump Pit) in Richland, WA
- Deployed (type: DOE) in FY 1996 at Hanford Site (Hanford Tank T-106) in Richland, WA

Expedited Reclamation Demo Using Cotter Concentrate

(OST/TMS ID: 2038/ TMS Application ID: 1430)

This project demonstrates the regulatory process to reclassify a mixed waste to a feed stock material, successful process modification to accommodate ten times higher uranium feed material, successful working relationship between industry and government to solve a mixed waste issue by taking advantage of the leveraging of funds with the commercial sector, and the successful possibility of processing other similar waste in the DOE complex.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Nevada Test Site (Mercury, NV, United States)
PBS Name:	Mixed Low-Level Waste [NV360, 0444]
Date of Deployment:	May 1997
Technology User:	Nevada Test Site Waste Management Division
Deployment Value/Impact: This option realized a cost savings of approximately \$3 million, was under budget, and completed regulatory compliance and 100 percent elimination of the waste two years ahead of schedule.	
Vendor Name for this Technology:	Same as primary Technology Title
Point of Contact:	
User Program POC(s):	OST Program POC(s):
<ul style="list-style-type: none">Mr. James Cebe (Nevada Test Site) - Las Vegas, NV. Tel. (702) 295-0957Charles G. Morgan (U.S. Department of Energy - Nevada) - Las Vegas, NV. Tel. (702) 295-0938	<ul style="list-style-type: none">Mr. Vince C. Maio (INEEL-MWFA) - Idaho Falls, ID. Tel. (208) 526-3696Mr. Bill Owca (Department of Energy - Idaho) - Idaho Falls, ID. Tel. (208) 526-1983

Major Developers:

Energy Fuels Nuclear, Inc. of Utah

Vendor Company:

International Uranium Corporation (IUC)

Other Deployments:

This is the first deployment of this technology.

Wireless Remote Radiation Monitoring System (WRRMS)

(OST/TMS ID: 2104/ TMS Application ID: 1138)

The RadStar Wireless Remote Monitoring System, developed by SAIC, monitors personnel dose and area exposure rate remotely from a predetermined command center located outside radioactively contaminated areas. A host personal computer monitors and records information transmitted from electronic dosimeters and collected by a transceiver base station using RadStar software. A radio transceiving alarming electronic dosimeter, wireless radio components, radiation detector, and a 9-V alkaline battery are contained in a small case worn by personnel. A dosimeter reader reads the dosimeters and resets them after use. The monitor weighs less than 400 g and is designed for gamma detection. Each dosimeter can be preset to alarm at a set point with either an audible alarm or light-emitting diode and will warn both the worker and the base station. Straight line signals can be transmitted over 10,000 ft.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Hanford, 221 U-Plant (Richland , WA, United States)		
PBS Name:	RL-ER06; Decontamination & Decommissioning (Canyon Disposition Initiative)		
Date of Deployment:	August 1998	Technology User:	Bechtel Hanford, Inc.
Deployment Value/Impact: The Wireless Remote Monitoring System has been used at Hanford’s U Plant as part of the Canyon Disposition Initiative for both personnel and area monitoring. The system provided real-time monitoring of worker dose levels, helping reduce the risk of worker exposure.			
Vendor Name for this Technology:		Same as primary Technology Title	
<u>Point of Contact:</u>			
User Program POC(s):		OST Program POC(s):	
Mrs. Shannon N. Saget (DOE-RL) - Richland, WA. Tel. 509-372-4029		Mr. John Duda (DOE/FETC) - Tel. 304-285-4217	

Major Developers:

Science Applications International Corporation

Vendor Company:

No Vendor information has been defined

Other Deployments:

- Deployed (type: DOE) in FY 1998 at Hanford (C Reactor) in Richland, WA
- Deployed (type: DOE) in FY 1998 at Hanford (N Basin Project) in Richland, WA
- Deployed (type: Non-DOE) in FY 1997 at Cooper Nuclear Power Station (Steam turbine building) in Brownville, NE

Iron Treatment Wall

(OST/TMS ID: 2156/ TMS Application ID: 1168)

Zero-valent iron (iron filings) will be placed in a trench, where it will react with TCE in ground water and decompose the contaminant. Since the iron treatment trench will rely on the natural flow of ground water through it, this will form a passive treatment system planned to last twenty years or more. This system has the advantage of showing significant cost savings, and providing in situ treatment of TCE.

DESCRIPTION OF THE DEPLOYMENT

Location: Kansas City Plant, SMU 6, 7 & 8 (Kansas City, MO, United States)

PBS Name: AL-007 Environmental Restoration

Date of Deployment: April 1998

Technology User: Kansas City Plant

Deployment Value/Impact: The successful operation of the permeable iron treatment wall at the Northeast Area of the Kansas City Plant could result in the annual savings of approximately \$300,000. This is the estimated cost of groundwater treatment performed on the contamination from the Northeast Area. This project also impacts our relationship with the regulators in that we are demonstrating that we are proactive in identifying and using new and innovative technology.

Vendor Name for this Technology: Same as primary Technology Title

Point of Contact:

User Program POC(s):

- Pam Saxman (DOE-AL) Tel. 505-845-6101
- Paul Dieckman (Allied Signal, Inc.) - Tel. (816) 997-2335

OST Program POC(s):

Scott Mc Mullin (DOE-SR) Tel. 803-725-9596

Major Developers:

Enviro Metal

Vendor Company:

No Vendor information has been defined

Other Deployments:

This is the first deployment for this technology.

Flygt Mixer

(OST/TMS ID: 2232/ TMS Application ID: 1345)

The Flygt Mixer is a submersible mixer technology to rapidly mix large quantities tank waste. This mixing is necessary to prepare the waste for transfer in support of immobilization. The Flygt Mixer uses an open propeller to move waste within the tank. This configuration creates long-range currents capable of mixing over 20,000 gal/min of tank waste. A test program developed mixer sizing and configuration data along with recommended operating practices for use in full-scale waste tanks. Flygt Mixers are less expensive, more effective, and require less maintenance than mixer pumps.

DESCRIPTION OF THE DEPLOYMENT

Location: Savannah River Site, Tank 17 (Aiken, GA, United States)

PBS Name: Not Specified

Date of Deployment: Fiscal Year 1997

Technology User: Westinghouse Savannah River Company

Deployment Value/Impact: The Flygt mixer removes enough bulk waste to reduce the workload on the other retrieval systems, reducing the costs associated with repairs and downtime from overworking those systems removing large quantities of waste that can be pumped from the tanks. The Savannah River Site requires an economical replacement for their current mixer pumps which are seen as a high-cost method of retrieving waste. This cost results from the need to build a superstructure over the tanks to support the weight of the pumps, and the need to slowly lower the mixer pumps into the tanks.

Vendor Name for this Technology: Same as primary Technology Title

Point of Contact:

User Program POC(s):

Mr. Thomas S. Gutmann (DOE-SR) - Aiken, SC.
Tel. (803) 208-7408

OST Program POC(s):

Ted Pietrok, DOE-RL, (509) 372-4546

Major Developers:

- Flygt
- Oak Ridge National Laboratory
- Pacific Northwest National Laboratory
- Westinghouse Savannah River Company

Vendor Company:

No Vendor information has been defined

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Tank W-5) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (GAAT Tank W-9) in Oak Ridge, TN

PHOSter

(OST/TMS ID: 2971/ TMS Application ID: 1897)

PHOSter(R) provides controlled addition of phosphate, a critical nutrient, into sites contaminated with organic compounds. The added phosphate balances nutrients needed by beneficial bacteria. This stimulates their growth and speeds up the natural process of contaminant degradation. PHOSter(R) is a premier example of a 'green', environmentally-friendly, technology that works with nature and uses minimal energy. It is simple, safe, effective, and economical permitting the cleanup of contaminated sites quickly and with minimal disturbance. Because cleanup time is 5-10 times faster than previously possible, it is a cost-effective approach to bioremediation and encourages cleanup of sites that might otherwise be ignored due to funding constraints.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Savannah River Site (Aiken, SC, United States)
PBS Name:	Upper Three Runs Project [SR-ER06, 0056]
Date of Deployment:	September 1997
Technology User:	WSRC-SRTC
Deployment Value/Impact: Similar financial scenarios have been developed for larger or smaller sites with varying levels of pollution and appropriately adjusted consumption of triethyl phosphate. At small sites, the time required to complete cleanup can be reduced to just 1 year. Large, heavily contaminated sites can require 3 years of effort. In virtually all cases, however, where organic compounds are the target pollutants, PHOSter makes a dramatic contribution to reduced costs and shortened time.	
Vendor Name for this Technology:	Same as primary Technology Title
Point of Contact:	
User Program POC(s): Les Germany (DOE-SR) - Aiken, SC. Tel. (803) 725-8033	OST Program POC(s): <ul style="list-style-type: none">Elizabeth Phillips (DOE-OR) - Oak Ridge, TN. Tel. 423-241-6172Sharon Robinson (DOE-SR) - Aiken, SC. Tel. 803-725-5793
Technology User POC(s): Dr. Brian Looney (WSRC-SRTC) - Aiken, SC. Tel. (803) 725-3692	Vendor Company POC(s): Carol A. Eddy-Dilek (Westinghouse Savannah River Company) - Aiken, SC. Tel. (513) 529-3218

Major Developers:

- A & L Underground
- Haselow Engineering
- Heritage Remediation and Engineering
- Priester and Associates
- Priester and Associates
- Stevenson and Palmer Engineering

Vendor Company:

Vendor Not Applicable(Supplied by Westinghouse Savannah River Company)

Other Deployments:

This is the first deployment of this technology.